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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/997,787

11/30/2001

Michael J. Foral

38099

4876

4249

7590

03/25/2004

CAROL WILSON  
BP AMERICA INC.  
MAIL CODE 5 EAST  
4101 WINFIELD ROAD  
WARRENVILLE, IL 60555

EXAMINER
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NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/997,787

Applicant(s)

FORAL ET AL. 

Examiner

Tam M. Nguyen

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 3-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminsky et al. (6,080,905) alone or in view of Hirai et al. (4,470,829)

Kaminsky discloses a process for purifying an olefinic feedstock by passing the feedstock into an adsorption zone to remove acetylenes from the feedstock. The operating conditions and the adsorbent employed in the process of Kaminsky are the same as the claimed operating conditions and the claimed adsorbent. It is noted that Kaminsky does not specifically disclose that the adsorbent has retained a substantial amount of carbon monoxide. However, the regeneration steps of Kaminsky are the same as the steps of regeneration of the adsorbent as disclosed in the present specification. Therefore, it would be expected that the Kaminsky adsorbent would retain a substantial amount of carbon monoxide as claimed. (See entire patent)

Kaminsky does not disclose a step of separating carbon monoxide from the product from the first adsorption zone. However, Kaminsky discloses that the adsorbent is effective to adsorb both acetylene and carbon monoxide. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Kaminsky by subsequently treating the product as claimed because the additional contacting step between the product and the adsorbent would further remove acetylene and carbon monoxide from the product.

Alternatively, Hirai discloses a process for removing carbon monoxide from a hydrocarbon feed by contacting the feed with an adsorbent comprising copper and having a surface area of 500 to 2000 m<sup>2</sup>/g (see col. 3, line 7 through col. 4, line 28). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Kaminsky by passing the product stream to the adsorption step of Hirai because the Hirai step is effective to remove carbon monoxide from the product.

*Response to Arguments*

The argument that the reducing gas employed in the regeneration step of Kaminsky does not contain at least 50 ppm of carbon monoxide is not persuasive because Kaminsky teaches that tail gas which comprises 15-35 percent hydrogen and 100-500 ppm CO can be used in the regeneration step. (See col. 16, lines 54-64)

The argument that there is no suggestion in Kaminsky to combine its disclosure with any other disclosure in order to remove carbon monoxide from the effluent mixture from its adsorbent zone is not persuasive. As discussed above, Kaminsky teaches the use of a tail gas containing CO. Consequently; it is necessary to remove CO from the effluent mixture from the adsorbent zone. The examiner maintains that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Kaminsky by subsequently treating the product as claimed because the additional contacting step between the product and the adsorbent would further remove acetylene and carbon monoxide from the product.

The argument that Hirai does not disclose the removal of carbon monoxide from a gaseous mixture containing an olefin of from 2-8 carbon atoms such as ethylene and propylene is not persuasive because Hirai teaches that the adsorbent is effective to remove CO from a gas stream including hydrocarbons. Therefore, it would be expected that the adsorbent would be effective to remove CO from a gas mixture comprising ethylene or propylene.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

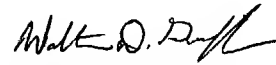
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tam M. Nguyen  
Examiner  
Art Unit 1764

TN

  
**Walter D. Griffin**  
**Primary Examiner**